

Path Protection Enforcement in PCEP

draft-stone-pce-path-protection-enforcement

IETF 106 - Singapore

A. Stone – Nokia (andrew.stone@nokia.com) - Presenter

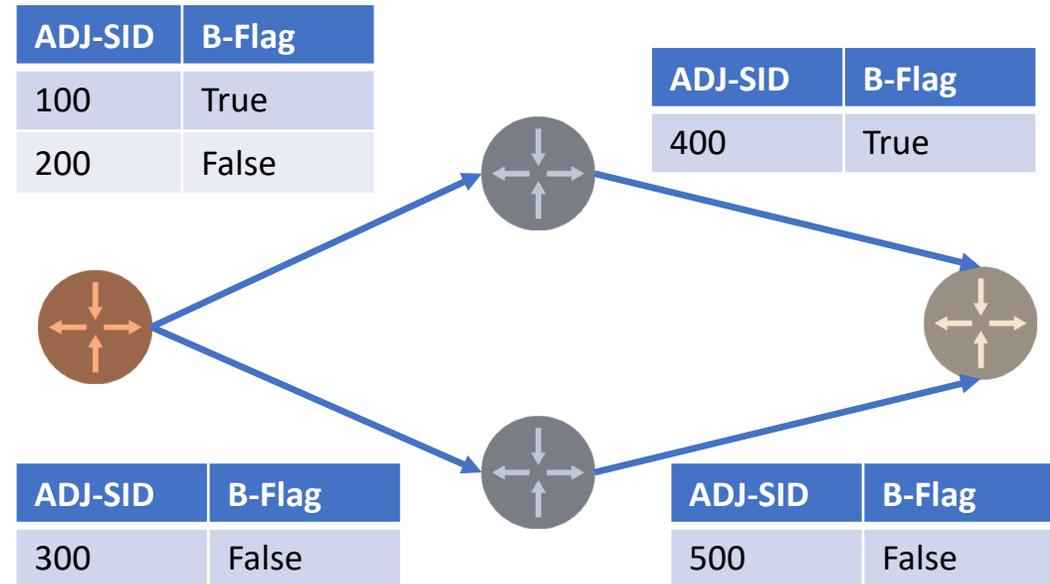
M. Aissaoui – Nokia (Mustapha.aissaoui@nokia.com)

Use case

Segment IDs (ADJ-SIDs) may be protected and this protection is advertised in IGP extensions with the B-Flag.

A PCE can consider this backup flag as a constraint per LSP / path calculation

- LSP 1 : must have a protected path
 - Feasible Result:
 - Path (100, 400)
- LSP 2 : must not have a protected path
 - Feasible result:
 - Path (300, 500)
- LSP 3 : do not care
 - Feasible result:
 - Path (100, 400)
 - Path (200, 400)
 - Path (300, 500)



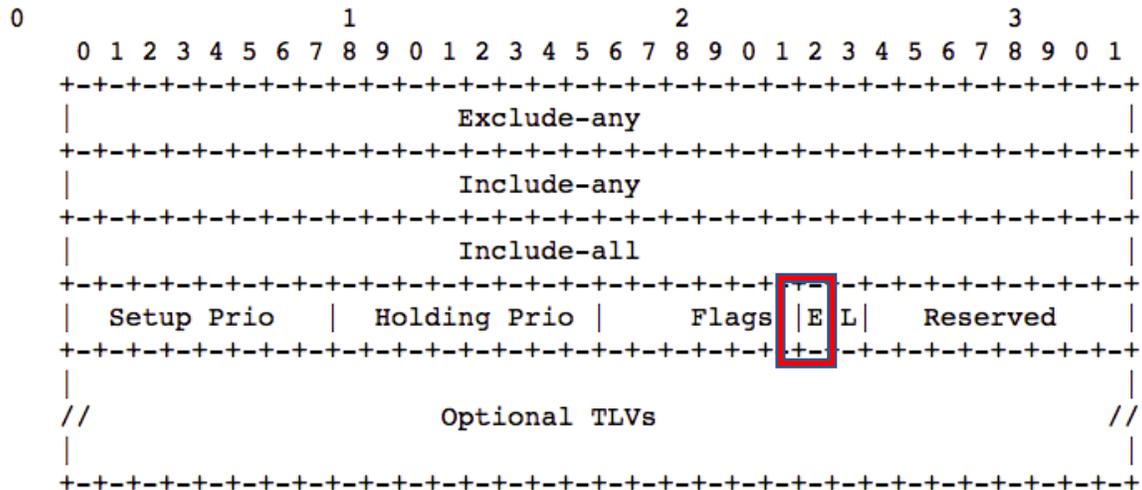
LFA Links/Paths not shown

Goals

1. Clarify the wording and expected behavior of “Local Protection Desired” (L-Flag) defined in RFC 5440
 - Flag originates from RSVP-TE (RFC3209) and PCE couldn't use this flag to influence path calculation, so it wasn't really a constraint for PCE
 - The definition of RFC5440 and the term “Desired” has some vagueness to it / implies a soft constraint
 - For SR-TE LSPs, Protection requirement can influence path calculation
 - Implementations have treated the “Local Protection Desired Bit” differently
 - either as a strict or loose constraint
2. Define a way to signal the strictness of the protection constraint
 - The requirement for protection could be a strict or loose requirement
 - The existing “Local Protection Desired” is a single bit, so unable to signal more than 2 options

Proposal

1. Some additional wording and statements around the usage of the Local Protection Desired Bit, while attempting to be *generally* backwards compatible with existing PCC and PCE implementations
2. New Flag: Enforcement (E-Flag) to accompany the L-Flag in the LSP Attributes object



Flags (8 bits)

- o L flag: As defined in [\[RFC5440\]](#) and further updated by this document. When set, protection is desired. When not set, protection is not desired. The enforcement of the protection is identified via the E-Flag.
- o E flag (Protection Enforcement): When set, the value of the L-Flag MUST be treated as a MUST constraint where applicable, when protection state of a SID is known. When E flag is not set, the value of the L-Flag MUST be treated as a MAY constraint.

Next step

- Comments / discussion / feedback appreciated

Thank you